



- (51) **International Patent Classification:**
C12N 15/82 (2006.01)
- (21) **International Application Number:**
PCT/US2005/003332
- (22) **International Filing Date:** 28 January 2005 (28.01.2005)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
60/541,142 2 February 2004 (02.02.2004) US
- (71) **Applicants** (*for all designated States except US*): **E.I. DUPONT DE NEMOURS AND COMPANY** [US/US]; 1007 Market Street, Wilmington, Delaware 19898 (US). **PIONEER HYBRID INTERNATIONAL** [US/US]; 800 Capital Square, 400 Locust Street, Des Moines, Iowa 50309 (US).
- (72) **Inventors; and**
- (75) **Inventors/Applicants** (*for US only*): **TARAMINO, Graziana** [IT/US]; 12 Bedford Court, Wilmington,

Delaware 19805 (US). **SAKI, Hajime** [DE/US]; 31 Bridle Brook Lane, Newark, Delaware 19711 (US). **MEELEY, Robert, B.** [US/US]; 3214 Edwards Avenue, Des Moines, Iowa 50312 (US). **NIU, Xiaomu** [CN/US]; 6473 N. Winwood Drive, Johnson, Iowa 50131 (US).

- (74) **Agent:** JOUNG, J., Kenneth; E. I. Du Pont de Nemours and Company, Legal Patent Records Center, 4417 Lancaster Pike, Wilmington, Delaware 19805 (US).
- (81) **Designated States** (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH

[Continued on next page]

- (54) Title:** ALTERING ROOT STRUCTURE DURING PLANT DEVELOPMENT

(57) Abstract: Isolated nucleic acid fragments and recombinant constructs comprising such fragments for altering root structure during plant development are disclosed along with methods of root structure alteration during plant development.

[illegible]

```

SEQ ID NO:6      S.
SEQ ID NO:8      -S
SEQ ID NO:30     S.
SEQ ID NO:26     -S
SEQ ID NO:27     -S

```




GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CI, CG, CL, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *without international search report and to be republished upon receipt of that report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.